

REMARKS

Claims 1-8 and 10-22 currently appear in this application. The Office Action of March 17, 2008, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Interview Summary

Applicant's attorney wishes to thank Examiner Goodrow for the courtesies extended during the interview of June 24, 2008. During that interview, it was agreed that claim 1 would be allowable if it included a range of the saturation magnetization and dielectric breakdown. Claim 8 would be allowable if it included the oxygen concentrations recited in claim 9.

Claim Amendments

In claim 1, the description of $0 \leq R(\text{Ca}) \leq 0.10$ includes the following embodiments:

- (i) $R(\text{Ca}) = 0$; $a = 0$
- (ii) $R(\text{Ca})$ is not 0; a is not 0.

Namely, the formula $\text{Ca}_a\text{Mg}_b\text{Fe}_c\text{O}_d$ (1) can be substantially represented by the formula $(\text{MgO})_b(\text{Fe}_2\text{O}_3)_{c/2}$.

corresponding to embodiment (i)' or $(\text{CaO})_a(\text{MgO})_b(\text{Fe}_2\text{O}_3)_{c/2}$,
corresponding to embodiment (ii).

Since in embodiment (ii) the CaO components is
essential, claim 1 has been amended to recite, "A Mg-based
ferrite material consisting essentially of MgO and Fe_2O_3
components [corresponding to embodiment (i)] or of CaO, MgO
and Fe_2O_3 components, [corresponding to embodiment (ii)]."

The specification teaches that the ferrite material
as claimed herein consists essentially of MgO and Fe_2O_3
components or of CaO, MgO and Fe_2O_3 components. The formula
 $\text{Ca}_a\text{Mg}_b\text{Fe}_c\text{O}_d$ (1) can be substantially represented by the formula
 $(\text{MgO})_b(\text{Fe}_2\text{O}_3)_{c/2}$ in formula (1), $a=0$ and $d= a + b + (3c/2)$.

It should be noted that page 11, lines 4-20 of the
specification as filed teaches that the ferrite material
claimed herein may contain components other than CaO, MgO and
 Fe_2O_3 components.

It is respectfully submitted that the claims as
amended in formula (1) are appropriately specified, since the
limitation $0.10 \leq b/(b + c/2) \leq 0.85$ specifies the mole ratio
between the Mao and Felon components. And the limitation $0 \leq$
 $R(\text{Ca}) \leq 0.10$ appropriately specifies the ratio between the Ca
components and the total of $(\text{CaO})_a(\text{MgO})_b(\text{Fe}_2\text{O}_3)_{c/2}$.

It is respectfully submitted that the claims
correctly express the values for a, b, c and d in formula (1),

since the limitation, since the limitation $0.10 \leq b/(b+c/2) \leq$ appropriately specifies the mole ratio between the magnesium oxide and the ferric oxide components, and the limitation $0 \leq R(\text{Ca}) \leq 0.10$ appropriately specifies the ration between the calcium oxide component and the total of $(\text{CaO})_a(\text{MgO})_b(\text{Fe}_2\text{O}_3)_{c/2}$.

In accordance with the Examiner's helpful suggestions, limitations regarding saturation magnetization measured at 14 kOe using a vibrating sample magnetometer and the limitations regarding the mixing the raw materials have been added to the claims.

Submitted herewith is a table showing calculated results for values of a, b, c and d in formula (a). The mole ratios of a, b, c and d can be calculated by the amounts of the raw materials used in each example. New claim 21 is based upon the data in this table.

Rejections under 35 U.S.C. 112

Claims 1, 8 and 12 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant regards as the invention. In claim 1, the references to a, b and c are said to fail to point out the applicant's invention because $a=b=c=100$ mol% and d is a whole number. Claim 1 is said to fail to teach the filed for the saturation magnetization. Claims 8 and 12 are said to teach mixing raw materials.

This rejection is respectfully traversed. As noted above, the claims have been amended to more clearly define the invention for which patent protection is sought.

Art Rejections

Claims 1-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) obvious over Mano et al., US 5,538,656.

This rejection is respectfully traversed. The presently claimed composition is a magnesium-based ferrite material consisting essentially of MgO and Fe_2O_3 , or of CaO, MgO and Fe_2O_3 components made by a specific heat-treatment process. If the heat-treatment step is not conducted as claimed herein, the ferrite will contain a significant amount of magnetite (Fe_3O_4) in the Fe_2O_3 . The Fe_3O_4 component decreases the dielectric breakdown voltage of a ferrite. The ferrites disclosed in Mano contain a significant amount of Fe_3O_4 , and, accordingly, cannot attain a high dielectric breakdown voltage, in contrast to the presently claimed ferrite material. Mano is silent with respect to technical information regarding a dielectric breakdown voltage or any need to attain a higher dielectric breakdown voltage. For the foregoing reasons, it is respectfully submitted that the presently claimed ferrite is neither disclosed nor suggested in Mano.

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In view of the above, it is respectfully submitted
that the claims are now in condition for allowance, and
favorable action thereon is earnestly solicited.

Respectfully submitted,

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	MgO		Fe2O3		CaO		a	b	c	d	b/(b+c/2)	R(Ca)
	molar ratio	Formula weight	molar ratio	Formula weight	wt%	Formula weight						
Example 1	70	40.30	30	159.69	0	56.08	0.00	0.70	0.60	1.6	0.70	0.00
Example 2	60	40.30	40	159.69	0	56.08	0.00	0.60	0.80	1.8	0.60	0.00
Example 3	50	40.30	50	159.69	0	56.08	0.00	0.50	1.00	2.0	0.50	0.00
Example 4	40	40.30	60	159.69	0	56.08	0.00	0.40	1.20	2.2	0.40	0.00
Example 5	35	40.30	65	159.69	0	56.08	0.00	0.35	1.30	2.3	0.35	0.00
Example 6	30	40.30	70	159.69	0	56.08	0.00	0.30	1.40	2.4	0.30	0.00
Example 7	50	40.30	50	159.69	2	56.08	0.04	0.50	1.00	2.0	0.50	0.02
Example 8	50	40.30	50	159.69	4	56.08	0.07	0.50	1.00	2.1	0.50	0.04
Example 9	50	40.30	50	159.69	8	56.08	0.16	0.50	1.00	2.2	0.50	0.08
Example 10	35	40.30	65	159.69	2	56.08	0.04	0.35	1.30	2.3	0.35	0.02
Example 11	35	40.30	65	159.69	4	56.08	0.09	0.35	1.30	2.4	0.35	0.04
Example 12	35	40.30	65	159.69	8	56.08	0.18	0.35	1.30	2.5	0.35	0.08
Example 13	20	40.30	80	159.69	2	56.08	0.05	0.20	1.60	2.6	0.20	0.02
Example 14	20	40.30	80	159.69	4	56.08	0.10	0.20	1.60	2.7	0.20	0.04
Example 15	20	40.30	80	159.69	8	56.08	0.21	0.20	1.60	2.8	0.20	0.08
Example 16	10	40.30	90	159.69	1	56.08	0.03	0.10	1.80	2.8	0.10	0.01
Example 17	35	40.30	65	159.69	4	56.08	0.09	0.35	1.30	2.4	0.35	0.04
Example 18	35	40.30	65	159.69	4	56.08	0.09	0.35	1.30	2.4	0.35	0.04
Example 19	35	40.30	65	159.69	4	56.08	0.09	0.35	1.30	2.4	0.35	0.04